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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/057,684 | 04/09/1998 | HIROSHI HASEGAWA | BA-22580 | 6672 |

178 7590 07/07/2003

BUCKNAM AND ARCHER
1077 NORTHERN BOULEVARD
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EXAMINER

DIAMOND, ALAN D

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| ART UNIT | PAPER NUMBER |
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1753

DATE MAILED: 07/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

12

Office Action Summary

Application No.

09/057,684

Applicant(s)

HASEGAWA ET AL.

Examiner

Alan Diamond

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 April 1999.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 07/634,054.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 11.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Comments

1. Prosecution is hereby resumed for the instant application.
2. The instant claims have been afforded a filing date of either April 9, 1998 (i.e., the instant filing date) or October 4, 1995 (i.e., the filing date of parent application 08/539,001). This is due to the fact that the instant claims are missing limitations that the Examiner deems are required (essential) limitations in the instant parent applications. Furthermore, some of the instant claims contain limitations that are not supported by the instant parent applications. Claims 1-8, 10, 11, 13, 14, 16, 19, and 20 lack a recitation that the tetraester of pentaerythritol is a base oil (or major component). This is an essential limitation in all of the instant parent applications and priority documents. Instant claims 4, 8, 12, 13, 16, 18, and 20-22 recite alkylglycidyl ether epoxy compounds, aryloxirane compounds, alkyloxirane compounds, and alicyclic epoxy compounds that are all not supported by the originally filed parent applications (with the exception of 08/539,001, which does recite them). The concentration range of "1-500 parts by weight based on 100 parts by weight of said refrigerant of a refrigerator oil", which appears in claims 7-22, is not supported by the parent applications (with the exception of 08/539,001, which does recite this concentration range). Thus, claims 1-8, 10, 11, 13, 14, 16, 19, and 20 have a filing date of April 9, 1998. Claims 9, 12, 15, 17, 18, 21, and 22 have a filing date of October 10, 1995.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 21 and 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 21, at line 6 on page 35, the term "allyloxirane" should be changed to "aryloxirane".

In claim 22, at line 6 on page 36, the term "allyloxirane" should be changed to "aryloxirane".

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1, 2, 4-8, 10, 11, 13, 14, 16, 19, and 20 are rejected are under 35 U.S.C. 102(e) as being anticipated by Kaimai, U.S. Patent 5,744,053.

In Example 1 of Kaimai, Base Oil 1 is prepared by reacting pentaerythritol with 2-ethylhexanoic acid and 3,5,5-trimethylhexanoic acid, where in the base oil has a kinematic viscosity of 64 cSt at 40°C. This base oil is used with R-134a refrigerant (see col. 7, lines 32-44). It is the Examiner's position that Base Oil 1 inherently has a pour point not higher than -10°C. The instant additives can be added to the base oil (see

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col. 5, line 62 through col. 6, line 53). Since Kaimai teaches the limitations of the instant claims, the reference is deemed to be anticipatory.

7. Claims 1-22 are rejected under 35 U.S.C. 102(e) as being anticipated by Sato et al, U.S. Patent 5,804,096.

Sato et al's Sample Oils 18 to 22 are formed by reacting pentaerythritol with 2-ethylhexanoic acid and 3,5,5-trimethylhexanoic acid (see col. 18, lines 16-51). Comparative oil 10 is made from a 1:1 molar ratio of 2-ethylhexanoic acid to 3,5,5-trimethylhexanoic acid (see col. 18, lines 53-58). The oils are used with refrigerant R-134a (see col. 19, lines 34-35; and Table 4). The oils can contain the instant additives (see col. 9, line 34 through col. 11, line 18). Since Sato et al teaches the limitations of the instant claims, the reference is deemed to be anticipatory.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hagihara et al, U.S. Patent 5,202,044.

Hagihara et al discloses a working fluid composition comprising (a) a hydrofluorocarbon; (b) and ester formed between a neopentylpolyol and a saturated branched aliphatic monocarboxylic acid having a carbon number of 7 to 9, and (c) a compound having an epoxycyclohexyl group and/or a compound having an

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epoxycyclopentyl group (abstract). Hagihara et al further teaches that the neopentyl polyol may include pentaerythritol (col. 3, lines 39-48) and that the monocarboxylic acid may include 2-ethylhexanoic acid and 3,5,5-trimethylhexanoic acid (col. 4, lines 53-46; note Ester I, Ester J, Ester K of Table 1 (col. 12), and Ester R of Table 2 (col. 13). It is also taught that a triaryl phosphate may be added to the working fluid composition to improve the lubricity or to protect the metal surface from corrosion (col. 9, lines 21-28), and that other conventional additives, such as benzotriazoles and metal deactivators, may be added to the working fluid composition as well (col. 9, line 51 through col. 10, line 57). Hagihara et al teaches the limitations of the instant claims other than the difference which is discussed below.

Hagihara et al does not exemplify the presently claimed composition. It would have been obvious to one of ordinary skill in the art at the time the invention was made, absent a showing of unusual or unexpected results, to have combined the presently claimed chlorine-free fluorocarbon refrigerant, the presently claimed tetraester of pentaerythritol, the presently claimed epoxy compound, the presently claimed phosphoric compound, the presently claimed additive and the presently claimed conventional oil because teachings of Hagihara et al disclose such a combination.

10. Claims 1-8, 10, 11, 13, 14, 16, 19, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaimai, U.S. Patent 5,744,053.

In Example 1 of Kaimai, Base Oil 1 is prepared by reacting pentaerythritol with 2-ethylhexanoic acid and 3,5,5-trimethylhexanoic acid, where in the base oil has a kinematic viscosity of 64 cSt at 40°C. This base oil is used with R-134a refrigerant (see

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col. 7, lines 32-44). It is the Examiner's position that Base Oil 1 inherently has a pour point not higher than -10°C . The instant additives can be added to the base oil (see col. 5, line 62 through col. 6, line 53). Kaimai teaches the limitations of the instant claims other than the difference which is discussed below.

Kaimai does not specifically teach the molar ratio of 2-ethylhexanoic acid to 3,5,5-trimethylhexanoic acid of 1:1 as in instant claim 3. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a 1:1 molar ratio for the 2-ethylhexanoic acid and 3,5,5-trimethylhexanoic acid so that a suitable base oil could be obtained.

Response to Arguments

11. Applicant's arguments filed April 12, 1999 have been fully considered but they are not persuasive. Applicant argues that Hagihara is inapplicable against the instant claims due to its September 10, 1991 filing date. However, this argument is not deemed to be persuasive because, as noted above, the instant claims have been afforded a filing date of either April 9, 1998 (i.e., the instant filing date) or October 4, 1995 (i.e., the filing date of parent application 08/539,001).

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patents Re. 19,265, 2,807,155, 5,021,179, 6,153,118, 6,228,282, and 6,582,621, and EP 406479, EP 479338, EP 480479 are hereby made of record.

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13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alan Diamond whose telephone number is 703-308-0840. The examiner can normally be reached on Monday through Friday, 5:30 a.m. to 2:00 p.m. ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on 703-308-3322. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

A handwritten signature in black ink, appearing to read 'Alan Diamond', with a stylized flourish at the end.

Alan Diamond
Primary Examiner
Art Unit 1753

Alan Diamond
June 27, 2003